Tuberculosis Health Brief
Santa Clara County

What is Tuberculosis?¹

Tuberculosis (TB) is a disease caused by the bacteria *Mycobacterium tuberculosis*. TB is spread from person to person when an individual with TB coughs, sneezes, or speaks and releases infected droplets into the air. Individuals who breathe in these droplets can get TB.

People who have TB can have two types of infection:

1. Latent TB infection: Individuals with latent TB infection (LTBI) have a small amount of TB in their bodies that their immune system keeps under control. They do not have symptoms, are not contagious and may remain that way for years.
2. Active TB disease: Occurs when TB bacteria multiply and a person develops symptoms such as cough, fever, or weight loss. They can also spread disease to others. Active TB disease can develop in people with LTBI when the immune system is weakened by stress or medical, such as diabetes, cancer, kidney disease, or HIV. Certain behaviors, such as smoking, also increase an individual’s risk for developing TB disease.

TB usually affects the lungs, but can also affect any part of the body such as lymph nodes, bones and joints, kidneys, intestines, and the brain. Untreated, TB can be fatal.

TB in Santa Clara County

There were 176 cases of TB in Santa Clara County (SCC) in 2012² which is similar to 2011 (N=181)³. Although the San Jose Metropolitan Area previously ranked first, in 2011, it ranked third in number of TB cases per 100,000 people among US metropolitan areas with a population over 500,000¹ (Figure 1). In 2012, there were 9.6 cases per 100,000 residents in Santa Clara County². This is much higher than the number of cases per 100,000 people in California (5.8 per 100,000 people) in 2012² and the United States (3.4 per 100,000 people) in 2011¹.

Figure 1: TB in Santa Clara County compared to other metro-cities in the United States, 2011¹
Who’s at risk for TB infection and developing active TB disease?

People who have lived and travel to countries with high TB rates are at the highest risk for being exposed to TB. For people with latent TB infection, certain chronic conditions and certain behaviors can increase the risk of progression from TB infection to active TB disease. Tobacco and diabetes may contribute to as much as 40-50% of Santa Clara County’s active TB disease each year.

Diabetes

- 20% (36/176) of Santa Clara County TB cases identified in 2012 also had diabetes.
- People with latent TB infection and diabetes are three times more likely to develop active TB disease than non-diabetics with latent TB infection.
- People with active TB disease and diabetes are more difficult to cure and are more likely to die with TB.
- A higher percentage of Asian/Pacific Islanders (16%) reported that they had been diagnosed with pre-diabetes than other racial/ethnic groups. However, fewer Asian/Pacific Islanders (5%) had been diagnosed with diabetes compared to Whites (7%) and Hispanics (11%).

Smoking

- People with latent TB infection who smoke are 2.5 times more likely to develop active TB disease than non-smokers with latent TB infection.
- Studies have shown that people with latent TB infection who are exposed to secondhand smoke are also more likely to develop active TB disease compared to those with TB infection not exposed to second hand smoke.
- About 1 in 10 adults and 8% of adolescents in Santa Clara County currently smoke.

Excess Alcohol

- 7% (13/176) of TB cases in Santa Clara County reported excess alcohol use in 2012.
- According to a World Health Organization review, people with heavy alcohol use are almost 3 times more likely to develop active TB disease than those who do not drink alcohol.

Other risk factors

- Other risk factors that increase the likelihood of progression from latent TB infection to active TB disease include HIV or other immune-compromising conditions, chronic kidney disease, or immunosuppressant medications such as TNF-α inhibitors or steroids.

Who has TB in Santa Clara County in 2012?

In 2012, most of the TB cases (65%) were between 25 and 64 years of age. Children and young adults between 0 to 24 years of age accounted for 10% of TB. Almost 25% of people diagnosed with TB were older than 65 years of age. The majority of SCC TB cases are of Asian or Hispanic race/ethnicity. The TB case rate for Asians was 22 per 100,000 people in Santa Clara County, which is almost seven times the overall rate of TB in the United States. The TB case rate among Asians in Santa Clara County has been trending downward from a peak of 37 per 100,000 people in 2007.
In 2012, 89% of active TB cases were in foreign-born residents, primarily from the following countries: Vietnam, Philippines, India, Mexico and China. Sixty-nine percent of foreign-born residents who developed active TB disease had lived in the United States for more than 5 years.

How does TB make us sick?

When TB affects the lungs, it is called pulmonary TB. In 2012, almost three quarters (71%) of TB cases in Santa Clara County had pulmonary TB, which is the form of TB that can spread to other people. TB can affect any site of the body including the lymph nodes, nervous system, bones, and kidneys. In 2012, six people with TB died in Santa Clara County, all were 65 years old or older.

TB that is resistant to standard treatment is very difficult to cure. In 2012, 17% (15/88) of culture positive cases in Santa Clara County were resistant to at least one of the standard TB medications (rifampin, isoniazid, ethambutol, or pyrazinamide). Fourteen percent (14%) of culture positive cases in Santa Clara County in 2012 were resistant to isoniazid (12/88), which was higher than the national average in 2011 (9.5%)\(^1\). Multi-drug resistant TB, which is resistant to both isoniazid and rifampin accounted for 3.4% (3/88) of culture confirmed TB cases in Santa Clara County in 2012\(^2\). This was also almost three times as high as the national average (1.3%) in 2011\(^1\).

What should people do if they feel they are at risk for TB?

- Ask their doctor to screen for TB.
- If they have or are diagnosed with latent TB infection, get treated in order to prevent the development of active TB disease.
References

1. Centers for Disease Control and Prevention
2. California Reportable Disease Information Exchange, 2012
3. California Reportable Disease Information Exchange, 2011
4. California Department of Public Health Tuberculosis Control Branch
7. Santa Clara County Department of Public Health Department, 2009 Behavioral Risk Factor Survey
10. California Healthy Kids Survey, 2009-10